

WHAT IS CLAIMED IS:

1. A filter for a carcinogen reduction, the filter comprising:
a filtering surface operable to filter carcinogen-containing material; and
a carcinogen-reducing amount of nucleic acid.
2. The filter of Claim 1, wherein the nucleic acid is distributed on the filtering surface.
3. The filter of Claim 2, wherein the nucleic acid is substantially uniformly distributed on the filtering surface.
4. The filter of Claim 1, wherein the nucleic acid provides structural support to the filter.
5. The filter of Claim 1, wherein the filter comprises at least approximately 80% nucleic acid by weight.
6. The filter of Claim 1, wherein the nucleic acid comprises purified DNA.
7. The filter of Claim 1, wherein the nucleic acid comprises apurinic acid.
8. The filter of Claim 1, wherein the carcinogen-containing material comprises a polyaromatic hydrocarbon.
9. The filter of Claim 1, wherein the carcinogen-containing material comprises at least two carcinogens capable of reacting with nucleic acid.

10. A filter for carcinogen reduction in tobacco smoke, the filter comprising:

a filtering surface operable to filter carcinogen-containing tobacco smoke; and
a carcinogen-reducing amount of nucleic acid.

11. The filter of Claim 10, wherein the nucleic acid is distributed on the filtering surface.

12. The filter of Claim 11, wherein the nucleic acid is substantially uniformly distributed on the filtering surface.

13. The filter of Claim 10, wherein the nucleic acid provides structural support to the filter.

14. The filter of Claim 10, wherein the filter comprises at least approximately 80% nucleic acid by weight.

15. The filter of Claim 10, wherein the nucleic acid comprises purified DNA.

16. The filter of Claim 10, wherein the nucleic acid comprises apurinic acid.

17. The filter of Claim 10, wherein the tobacco smoke comprises a polycyclic aromatic hydrocarbon.

18. The filter of Claim 10, wherein the tobacco smoke comprises at least two carcinogens capable of reacting with nucleic acid.

19. The filter of Claim 10, wherein the filter is of a size and shape that permits use as a cigarette filter.

20. The filter of Claim 10, wherein the filter is of a size and shape that permits use as an air-intake filter for an air circulation system.

21. The filter of Claim 10, wherein the filter is of a size and shape that permits use in a portable air filtration system.

22. A filter for carcinogen reduction in combustion exhaust, the filter comprising:

a filtering surface operable to filter carcinogen-containing combustion exhaust; and a carcinogen-reducing amount of nucleic acid.

23. The filter of Claim 22, wherein the nucleic acid is distributed on the filtering surface.

24. The filter of Claim 23, wherein the nucleic acid is substantially uniformly distributed on the filtering surface.

25. The filter of Claim 22, wherein the nucleic acid provides structural support to the filter.

26. The filter of Claim 22, wherein the filter comprises at least approximately 80% nucleic acid by weight.

27. The filter of Claim 22, wherein the nucleic acid comprises purified DNA.

28. The filter of Claim 22, wherein the nucleic acid comprises apurinic acid.

29. The filter of Claim 22, wherein the combustion exhaust comprises a polycyclic aromatic hydrocarbon.

30. The filter of Claim 22, wherein the combustion exhaust comprises at least two carcinogens capable of reacting with nucleic acid.

31. The filter of Claim 22, wherein the combustion exhaust comprises exhaust from an internal combustion engine and wherein the filter is of a size and shape that permits use in an internal combustion exhaust system.

32. The filter of Claim 22, wherein the filter is of a size and shape that permits use in an industrial smoke stack.

33. A filter for carcinogen reduction in liquid effluent, the filter comprising:

a filtering surface operable to filter carcinogen-containing liquid effluent; and
a carcinogen-reducing amount of nucleic acid.

34. The filter of Claim 33, wherein the nucleic acid is distributed on the filtering surface.

35. The filter of Claim 34, wherein the nucleic acid is substantially uniformly distributed on the filtering surface.

36. The filter of Claim 33, wherein the nucleic acid provides structural support to the filter.

37. The filter of Claim 33, wherein the filter comprises at least approximately 80% nucleic acid by weight.

38. The filter of Claim 33, wherein the nucleic acid comprises purified DNA.

39. The filter of Claim 33, wherein the nucleic acid comprises apurinic acid.

40. The filter of Claim 33, wherein the combustion liquid effluent comprises at least one carcinogen capable of reacting with nucleic acid.

41. The filter of Claim 33, wherein the combustion exhaust comprises at least two carcinogens capable of reacting with nucleic acid.

42. The filter of Claim 33, wherein the filter is of a size and shape that permits use in a liquid effluent outlet pipe.

43. A method for reducing the amount of carcinogen in a carcinogen-containing material comprising passing the material through a filter including:

a filtering surface operable to filter the carcinogen-containing material; and
a carcinogen-reducing amount of nucleic acid.

44. The method of Claim 43, wherein the nucleic acid comprises DNA.

45. The method of Claim 43, wherein the nucleic acid comprises apurinic acid.

46. The method of Claim 43, wherein the carcinogen-containing material comprises tobacco smoke.

47. The method of Claim 43, wherein the carcinogen-containing material comprises combustion exhaust.

48. The method of Claim 43, wherein the carcinogen-containing material comprises liquid effluent.

49. A method of making a filter for carcinogen reduction comprising:
forming a filtering material into a porous filter body;
applying to the filtering material a nucleic acid.

50. The method of Claim 49, wherein the nucleic acid comprises purified DNA.

51. The method of Claim 49, wherein the nucleic acid comprises apurinic acid.

52. The method of Claim 49, further comprising:
applying to the filtering material a liquid solution comprising nucleic acid;
drying the filtering material.

53. The method of Claim 52, further comprising applying a crosslinking agent operable to covalently bond the nucleic acid to the filtering material.

54. A method of making a filter for carcinogen reduction comprising:
purifying nucleic acid; and
forming the purified nucleic acid into a porous filter body.

55. The method of Claim 54, wherein forming comprises adding an aqueous nucleic acid solution to an alcohol solution in order to precipitate nucleic acid into a porous filter body.

56. The method of Claim 54, wherein the nucleic acid comprises purified DNA.

57. The method of Claim 54, wherein the nucleic acid comprises apurinic acid.